REMARKS

Claims 1-28 and 35-36 are pending in the present application. Claims 29-34 have been canceled. Claims 1, 10, 15, 19, 20, 21, 22, 24, 28, 35 and 36 are independent.

Allowable Subject Matter

Applicants appreciate the Examiner's indication that claims 21 and 28 are allowed. For the reasons discussed below, Applicants believe that all of the pending claims are in condition for allowance.

Lack of Response to Previous Arguments

The Office Action mailed April 23, 2004 contains a section entitled "Response to Arguments." In this section, it is stated that Applicants' arguments filed with the Amendment of January 5, 2004 have been considered but are moot in view of the new grounds of rejection. This is incorrect.

Although the most recent Office Action applies a new reference (Kight), the Merli and Fee et al. patents are reapplied. Applicants submitted substantial arguments against Merli and Fee, but such arguments are not answered by the most recent Office Action. In other words, arguments concerning references that are reapplied are not automatically made moot in view of a newly applied reference and ground of rejection. This is what has been done in the most recent Office Action.

In all events, Applicants respectfully requests fully responsive arguments in the next Office Action. More preferably, however, Applicants desire a Notice of Allowance in which it would not be necessary to answer Applicants previous arguments.

Art Rejections

Claims 1, 6-10, 13 and 14 are rejected under 35 USC §103(a) as being unpatentable over Merli (USP 6,088,141) in view of Kight (USP 5,623,357). Claims 2-5, 11 and 12 are rejected under 35 USC §103(a) as being unpatentable over Merli, Kight and in further in view of Yemini (USP 5,528,516). In addition, claims 15-20, 22-27, 29-36 are rejected under 35 USC §103(a) as being under patentable over Merli, Kight and Fee (USP 5,914,794). These rejections, insofar as they pertain to presently pending claims, are respectfully traversed.

Merli discloses a rather conventional and so-called "self-healing network". A telecommunications node according to Merli includes fault monitors such as first and second fault monitors 222 and 224. These fault monitors, as further discussed in the paragraph bridging columns 5 and 6, tap a small amount of the incoming optical signal. Upon the detection of zero optical power indicating a loss of signal state at the local node, a standard protection switching operation will be carried out.

Merli certainly does not disclose or suggest receiving, monitoring or otherwise detecting optical characteristics from an upstream optical device or node. Instead, Merli is solely concerned with local monitoring of received optical signals via a power monitoring technique.

Indeed, the Office Action agrees with the argument above. Specifically, the Office Action admits that Merli does not disclose a separate monitor for upstream faults. To supply this feature, Kight is applied.

Kight discloses a method and apparatus for monitoring synchronous optical networks. Kight gathers performance monitoring data such as optical received power, laser bias current and case temperature via an analogue sensor module 40 and sensor interface 76 (see paragraph bridging columns pages 7 and 8). This performance data, however, is merely stored (see column 8, lines 34-46).

Significantly, the performance monitoring statistics of Kight may also be utilized to produce reports upon request (see column 11, lines 10-17). This performance data is, however, not utilized to activate a fault restoration element. At best, when the performance exceeds a program threshold, then an alarm is raised (see column 11, lines18-22).

Even more significantly is the fact that the only way in which protection switching is activated by Kight is the standard automatic protection switching functionality that is included in such standards such as SONET or SDH. This is discussed in column 5, lines 42-49 as well column 10, lines 62-64. Such automated protection switching according to the SONET standard is performed by the setting of certain overhead bytes in the SONET frame. Upon the receipt of such overhead bytes, as is well know in the art, automatic protection switching may be performed. This is very standard and part of the SONET specification itself.

Thus, Kight does appear to generate performance data and does appear to utilize standard automatic protection switching functionality, but Kight fails to disclose or suggest correlating local fault data with remote fault data in order to determine when to activate a fault restoration element. It is the integration of the local and remote data and the activation of the fault restoration element based on the correlation of these two data sets which is a key inventive feature of the present invention which is not disclosed or suggested by the applied art.

Indeed, Kight offers no disclosure, suggestion, or vague hint of combining the local performance data with any data received remotely. Instead, the local performance data is merely stored or, at best, used to raise a local alarm. Standard APS switching is utilized, but such automatic switching is solely based on the overhead data and does not include the local data. In other words, there is no correlation of local fault data with remote fault data in order to determine when to activate a fault restoration element.

In terms of claim 1, the combination of Merli and Kight fails to disclose or suggest a local controller correlating the first and second sets of optical characteristics and activating the fault restoration element if the correlated first and second set of optical characteristics have values corresponding to a potential fault requiring activation of the fault restoration element. Recall that the first set of optical characteristics is data measured by at least one optical sensor as claimed and are optical characteristics of the optical datastream at the node. In other words, the claimed at least one optical sensor measures the first set of optical characteristics at the local node in which the sensors are located. Recall also that the second set of optical characteristics is derived from a signal sensor that his configured to receive the second set of optical characteristics of the optical datastream from an upstream optical device. In other words, the second set of optical characteristics regards or relates to the optical datastream and is sent from an upstream optical device and is, therefore, data concerning a remote, upstream optical device. The claimed local controller correlates the first and second sets of data which is a feature certainly not found or suggested by the applied art of record.

It appears that the Office Action is employing impermissible hindsight reconstruction to arrive at the claimed invention. Applicants respectfully submit that an analysis of the propriety of any rejection under 35 U.S.C. § 103(a) begins with the text of that section, particularly the phrase "at the time that the invention was made." It is this phrase which guards against entry into the "tempting but forbidden zone of hindsight." *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1616 (Fed. Cir. 1999). Measuring a claimed invention against the standard established by Section 103 "requires the often difficult but critical step of casting the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then accepted wisdom in the field." *Id.*, 50 U.S.P.Q.2d at 1617.

The Federal Circuit has made it very clear that "the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosures as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight." *Id.*

The required "evidence" of a teaching, suggestion or motivation to make the cited combination of references can be found in the prior art references themselves (the most typical location), the knowledge of one of ordinary skill in the art, or in some cases, from the nature of the problem to be solved. *Id.* The range of potential sources; however, does nothing to diminish the requirement for actual evidence. "The showing must be clear and particular" and cannot be met by broad conclusory statements. *Id.*

There is simply no evidence of record in this application that provides any teaching, suggestion or motivation to so modify the cited prior art reference, let alone a showing that is "clear and particular" as it must be. *See, e.g., In re Dembiczak, supra,* 50 U.S.P.Q.2d at 1617. Hence, to the limited extent that the cited reference might be modified so as to accomplish Applicants' claimed invention (a fact that Applicants strongly contends, *supra*, cannot be done), it is only through the "blueprint drawn by the inventor," *Interconnect Planning Corp. v. Feil*, 227 U.S.P.Q. 543, 547 (Fed. Cir. 1985), that that combination can be assembled, not from the state of the art at the time of Applicants' invention as it must be.

This hindsight reconstruction is quite apparent because the Office Action mixes and matches the features found in the prior art by utilizing the claims as a guide to reconstruct the claimed invention. More specifically, Merli merely measures the optical power of a received signal to decide whether to trigger protection switching. Although Merli also measures local optical performance data, the

protection switching functionality is solely triggered by standard automatic protection switching algorithms that utilize received SONET or SDH overhead data. It is the combination of local and remote data (first and second sets of optical characteristics) and the correlation of these first and second sets of the data which is a feature not found in any of the applied art of record. Merely stating that it would have been obvious to combine these data to determine whether to activate a fault restoration element clearly utilizes the disclosed invention as the glue to combine these two disparate teachings. Such hindsight reconstruction of the invention is clearly not permitted by the case law and that is exactly what the Office Action has done.

Furthermore, the Office Action lacks certain evidence that would otherwise be necessary to properly reject the claims. This evidence chiefly includes lack of a correlation of the first and second sets of optical characteristics. No such correlation is disclosed or suggested by any of the art of record. Even if it were, the claimed local controller correlates the first and second sets of optical characteristics and activates the fault restoration element if the correlation has values corresponding to a potential fault. No such decision making is disclosed or suggested by any of the art of record.

In terms of claim 10, the art of record fails to disclose or suggest the claimed local controller that compares the first and second sets of optical characteristics to detect a loss of signal in one or more of the channels. No such comparing of the first and second sets of optical characteristics is disclosed or suggested by any of the art of record, particularly Merli or Kight. Furthermore, claim 10 further recites that based on this comparison, the local controller initiates a line switch to isolate a line fault or an equipment switch to isolate an equipment fault. This decision making is clearly based on the comparison of the first and second sets of optical characteristics which is a feature completely absent from the applied art. Still further, the decision making (to initiate a line switch or initiate an equipment switch) is based on this comparison which is another feature completely absent from the applied art.

With respect to independent claim 15, the combination of Merli and Kight also fails to disclose or suggest the claimed local controller that is configured to activate the at least one fault restoration element if the comparison of the first and second sets of optical characteristics indicate a potential fault. As argued above, there is certainly no comparison of the first and second sets of optical characteristics and certainly no comparison which indicates a potential fault requiring activation of a fault restoration element as further recited in independent claim 15.

In regards to claim 19, the combination of Kight and Merli fails to disclose or suggest the claimed control module that correlates the optical characteristics of the channels measured at the node with the channel status information received from at least one other node to determine if the node should initiate a line switch or an equipment switch. Again, the applied art performs no such correlation. In claim 19, the correlation is between the optical characteristics of the channels measured at the node (local data) with the channel status information received from at least one other node (remote data) to determine if the node should initiate a line switch or an equipment switch. Thus, there is not only a correlation of these two data sets, but also a determination of whether a line switch or an equipment switch should be initiated. These two features are clearly absent from the applied art.

With respect to independent claim 20, the combination of Merli and Kight also fails to disclose or suggest the claimed local microprocessor which determines whether to perform a line switch or an equipment switch as a function of the optical power characteristics of the local node correlated with the status reports from the other nodes of the optical network via the inter-node channel. Again, there is no correlation as claimed. In claim 21, this correlation is between the optical power characteristics of the local node and the status reports from the other nodes of the optical network which are received via the inter-node channel. There is no such correlation in the applied art. Even if there were, there is no determination of whether to perform a line switch or an equipment switch as a function of such a

correlation. These features are clearly absent from the applied art and without them a proper rejection cannot be made.

In regards to method claim 22, the applied art also fails to disclose or suggest the claimed step of initiating a line switch to redirect traffic to an alternate optical path to restore data traffic if there is a both a loss in signal from the neighboring node and status reports are not being received from the neighboring node. This initiating step requires the combination of two different data. The first data is the loss of signal (local to the node by originating from the neighboring node) and status reports being received from the neighboring node (remote data) in order to initiate a line switch. The claimed method of fault detection as recited in claim 22 requires there to be both a loss is signal from the neighboring node and status reports not being received from the neighboring node. This combination of two data and the decision to initiate a line switch based on both of these two data are features clearly absent from the applied art.

With respect to independent claim 24, the combination of Merli and Kight also fails to disclose or suggest the method of fault detection and isolation claimed therein. Specifically, the applied art fails to disclose or suggest comparing the first and second sets of optical characteristics. There is certainly no such comparison in the applied art. Recall that the first set of optical characteristics is sensed by the claimed sensing step which senses optical characteristics of optical channels traversing the node. The second set of optical characteristics is received via status reports from another node in the network. The method of claim 24 compares these first and second sets of optical characteristics which is a feature not found in the applied art. Another feature not found is the claimed determining which determines if one or more optical channels are being dropped in the node based on said comparing. In other words, the determination is based on the comparing which, in turn, is based on both the first and second sets of

optical characteristics. Still further, the applied art fails to disclose or suggest initiating an equipment switch in the local mode to restore the dropped traffic based on said determining.

With respect to the method of coordinating the action of the nodes of an optical network to perform a fault detection and isolation network function as recited in claim 35, the applied art fails to disclose or suggest certain features recited therein. Specifically, neither Merli nor Kight discloses or suggests the step of comparing the second step of optical characteristics to the channel map to determine if a fault has occurred requiring that the controller at the second node to activate a restoration element. In this claim, the second set of optical characteristics is sensed by a sensing step and regards the optical characteristics of the datastream at the second mode. The channel map is a channel map of active channels at the first mode. Thus, these data sets are from two different nodes, the second set of optical characteristics concerns the second node while the channel map concerns active channels at the first node. The claimed set of comparing the second set of optical characteristics (concerning the second node) to the channel map (listing active channels at the first node) is a feature not found or suggested by the applied art.

Lastly in regards to method claim 36, the applied art fails to disclose or suggest the method of fault detection and isolation as recited therein. Specifically, neither Merli nor Kight discloses or suggests a local controller that compares the optical characteristics measured at the local node to the channel map to determine if a fault has occurred requiring that the local controller activate a restoration element. Recall that the channel map is a channel map of active channels that each node in the optical network and, therefore, comprises data remote from the local node. Recall also that the set of optical characteristics is sensed by the sensing step which senses the optical characteristics of the data stream at each node. Thus, there is a gathering of local data at each node which comprises a set of optical characteristics. The distributed or remote information is the channel map which is updated at each node

to include a list of active channels. The local controller at each node in the optical network then compares the set of optical characteristics measured at the local node to the channel map to determine if a fault has occurred. Thus, there is a comparison of local data with remote data (channel map) to determine if a fault has occurred. There is no such comparison disclosed or suggested by any of the applied art, particularly Merli and Kight.

Furthermore, the Fee patent fails to remedy any of the noted deficiencies in the base combination of Kight and Merli. Indeed, Fee is merely applied to teach an element manager that communicates with the entire network (see page 6 of Office Action).

Still further, Yemini also fails to remedy of the noted deficiencies in the base combination of Merli and Kight. Yemini is merely applied to teach an apparatus in which fault reporting and event correlation uses a microprocessor and software. No such features appear in any of the independent claims. Even if they did, Yemini is really directed to a computer network and not an optical network and has no real applicability to the present invention. Lastly, Yemini further fails to disclose or suggest any of the main features of the invention which are variously asserted above.

For all of the above reasons, taken alone or in combination, Applicants respectfully request reconsideration and withdraw of the art rejections.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number (703) 205-8000, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____
Michael R. Cammarata, #39,491
P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

MRC/CJB/mlr
4450-0296P